DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT, CORPS OF ENGINEERS
210 TUCKER BOULEVARD, NORTH
ST. LOUIS, MISSOURI 63101

REPLY TO ATTENTION OF

Big River Mine
MO7811268 79
17,8
Pine Ford Study
2-10-82

LMSED-BF

10 February 1982

Mr. Bob Fenemore
U.S. Environmental Protection Agency
314 East 11th Street
Kansas City, MO 64106

FEB 16 1982

Dear Mr. Fenemore:

I am writing to forward a draft of the Pine Ford future-without-project condition as developed by the St. Louis District study team.

As you no doubt recall, attendees at the interagency meeting held here in St. Louis on 16 December 1981 agreed that the Corps would develop a draft of the future-without conditions and furnish it to the various agencies for comment.

Because of our tight schedule, I am requesting that you furnish any comments, changes or additions to the St. Louis District by **19 February 1982.** Your rationale or source of information for proposing changes should also be included. Following receipt of comments, we envision a meeting where these comments can be discussed and, hopefully, resolved into a future scenario agreed upon by all parties.

This meeting may be held in conjunction with a meeting on heavy metals. We anticipate receiving the draft report from the Columbia National Fisheries Lab shortly and will disseminate that report for review also.

Your timely review and response to the attached materials is greatly appreciated.

Sincerely,

JACK R. NIEMI, P.E.
Chief, Engineering Division

1 Incl
as

PINE FORD FUTURE WITHOUT A PROJECT

1. Mineral Resources

According to the Missouri Geological Survey, there are no significant unmined lead deposits remaining in the study area. There are, however, several large and a few small lead tailing piles on the upper Big River basin near the towns of Bonne Terre, Desloge, Flat River, and Leadwood. Attempts are being made to stabilize these piles with vegetation; however, it is unlikely that the piles will be completely stabilized without Federal action, because of the great cost involved. The Missouri Reclamation Law does not cover lead mining. Therefore, the lead tailing piles should continue to erode into the Big River causing continuing lead pollution.

Barite mining in the Washington County District, according to industry and government sources, will continue for at least another 25 years, providing the demand does not change. All mines developed since 1973 are covered by the surface mining law which requires the lands to be drained and graded. A tax on barite provides money for reclaiming older mines, but this is expected to take considerable time.

2. Pollution

Air - Air quality in the study area is expected to remain essentially the same for the next 100 years.

Land - Strip mining of barite and lead have caused land-based pollution. Barite mining is expected to continue for at least 25 years, but reclamation efforts are improving. The lead tailing piles should be partially reclaimed with vegetation, reducing them as a source of land pollution.

Water - Without Federal action the lead tailing piles will continue to erode into the Big River and its tributaries. Barite pollution should decline with a reduction of barite mining and an increase in reclamation.

3. Fish and Wildlife Habitat - a. Lower Meramec Floodplain In St. Louis County, future projections show an increase in recreation lands and a decrease in agriculture. This should enhance fish and wildlife habitat if forest land is preserved or created.

In Northern Jefferson County, where there is no planning and zoning, fish and wildlife habitat will continue to be converted due to conversion of forest to other land uses, especially residential.

b. Big River Floodplain It is projected that there will be no change in fish and wildlife habitat because land use will not change appreciably.

c. Upland Areas Upland areas in St. Louis County and Northern Jefferson County will continue to develop reducing the amount and value of fish and wildlife habitat. It should improve in barite mining areas as reclamation improves and should remain the same in the rest of the study area.

4. Endangered Species

Conditions for the Federally endangered pink mucket pearly mussel, bald eagle, Indiana bat and gray bat are expected to remain the same in the study area.

5. Archaeological and Cultural Resources

The archaeological and architectural resources of the Big River valley are presently being affected by a variety of factors. The post World War II trend away from small scale subsistence farming in the valley is expected to continue. While the resulting decrease in cultivation has reduced plow-related damage to archaeological properties, declining emphasis on farming (and the subsequent abandonment of small farmsteads) has dramatically accelerated the rate at which the vernacular architecture of the area is being lost through neglect and vandalism.

Another factor will continue to have an impact upon cultural resources in the future is suburban residential and light industrial development in the valley. Although this phenomena is only expected to affect the lower reaches of the project area, the consequences of such expansion on this resource are profound. Although zoning ordinances in St. Louis County currently prohibit floodplain development, no such ordinance exists in Jefferson County. As a result future development will no doubt destroy numerous presently unknown archaeological and architectural properties in this area.

6. Social Well-Being

A. Homes Displaced. Continued, periodic flooding will cause homes and possibly other structures to be displaced especially in areas frequently flooded. The majority of these structures are located along the lower 25 miles of the Meramec River. The following table illustrates damage susceptability.

FLOOD EVENT	-MERAMEC- NO. OF BUILDINGS DAMAGED	-BIG RIVER- NO. OF BUILDINGS DAMAGED	TOTAL
5	770	150	920
10	1440	210	1650
25	2740	340	3080
50	3220	420	3640
100	3520	540	4060
500	4050	700	4750

B. Transportation. Moderate to severe flooding will continue to periodically disrupt day-to-day traffic flows and commerical business activities during flood periods. Such modes as over-the-road and rail may experience considerable damages to pavements and rail systems respectively. The replacement costs for a typical 40 foot street is estimated at $10.00 per square yard. The repair cost for a severely damaged one-mile rail system is estimated at $112,400. In addition, auto detours due to road flooding can cause additional gasoline expenditures depending upon the severity and length of flooding.

The dollar damages do not include business losses, personal income losses or losses in community services.

C. Education. Periodic flooding may hamper transportation to and from school. Damages/destruction of homes will also cause discontinuous shcool education. Actual damages to school buildings could lead to considerable education disruptions. Given a tax assessment of 35% of market value, a typical residential market value of $40,000 and school tax of $2.69 per $100.00, the typical value of a loss of a school day is $1.03 per day per student. This value represents the loss in education in terms of taxes forgone and does not reflect the intrinsic value of a loss in knowledge.

D. Leisure. Leisure activities in the Pine Ford basin and along the Meramec River will focus on river related fishing, swimming, canoeing and general boating. It is anticipated that state and local governments will continue to provide parks and recreation facilities in both urban and rural areas. As indicated in a recent land use plan, prepared by the St. Louis County Planning Commission, it would appear that within the next twenty years, particular emphasis will be placed on acquiring land within the floodplain of the lower Meramec for recreational use. Public access areas along the Big, Borgouse and Meramec Rivers will probably continue to be acquired and developed by the Missouri Department of Conservation until the need for such facilities is satisfied or until the rivers are developed to their practical limits. The development of any sizable flatwater recreation facilities for the general public is not forseen. Flat water recreation will continue to be limited to relatively small private developments. The nearest large lakes will remain a drive of fifty miles or more for most of the study area. The nearest such facilities are Carlyle Lake in Illinois and Clearwater Lake, Lake Wapappello, Mark Twain (Clarence Cannon) Lake and the Lake of the Ozarks in Missouri.

E. Regional Growth. The Pine Ford site will remain essentially agricultural, wooded or open space. Income (personal or commercial) growth will continue to based upon agricultural endeavors. Over-all incomes in the upper Pine Ford basin will be rooted in agricultural, commercial forestry and mining activities. These are primary commodities used as inputs to the manufacturing process.

For the most part, history has shown that many primary commodities do not experience the price increases that are prevalent to the manufacturing sector of our economy. Unless this pattern changes, the upper basin will not grow at the same rate as the lower Meramec River basin encompassing St. Louis and Jefferson Counties.

F. Health, Safety, Welfare. Flooding will continue to be a problem for both agricultural and urban land uses unless measures are taken to reduce the magnitude of flooding. At present, annual structural damages (including contents) along the Meramec River and the Big River are $8,200,000 and 500,000 respectively. A 500 year flood would damage over 4000 structures along the lower Meramec River and approximately 700 structures along the Big River. Agricultural damages under existing conditions are estimated at

$300,000 along the Meramec River and $1,300,000 along the Big River. The problem of headwater flooding in the lower Meramec may worsen slightly as future development increases runoff.

7. Regional Development

A. Tax Revenues. State and local real estate and sales taxes will increase in proportion to population growth and real estate development. St. Louis County's General Plan (1981) shows that increased development and population growth can be expected in Lemay, Concord, Sappington, Fenton, Valley Park, Bonhomme, Times Beach, and Eureka areas. Most of this growth and development will be in residential land use types, but does include additional commercial and industrial developments. As a result, real estate and sales tax revenues are expected to increase. One of the dampening aspects of this growth is that new roads, sewers, and other utilities will have to be constructed and local police and fire departments expanded. Recent studies have indicated that new subdivision construction frequently adds more to local government costs than to revenues, but this varies with local land use control and building codes.

B. Property Values. Properties in the flood prone areas will remain encumbered due to flooding. Agricultural land prices and productivity will be adversely impacted by flooding problems. According to a publication entitled "Analysis of Theories and Methods for Estimating Benefits of Protecting Urban Floodplains by Greenberg, Leven and Schlottman (1974), the difference in value of a typical structure off as opposed to on the floodplain is $1,800. This can be "recovered" by providing flood protection.

C. Public Facilities/Services. New facilities and services in the Pine Ford basin will be limited to those provided by state and local governments. Flood damage prevention will probably continue to be addressed by individual communities with planning assistance being supplied by state and county governments. Municipal and industrial water supply will continue to be addressed by the individual communities with groundwater being the primary source. The exception to this will be the urban and suburban areas in St. Louis County and Northern Jefferson County. These communities and the utilities which service them will continue to rely on either direct withdrawals from the Meramec and Big Rivers or shallow wells in the alluvium of these two rivers. Such use of the two rivers will increase until the rivers prove to be an unreliable source. Unless future water supply withdrawals are carefully monitored by state agencies it is quite possible that aquatic life could be impacted during low flow periods. When water demand within St. Louis and northern Jefferson Counties exceed the Meramec River's capacity, then it is most likely that treated water will be piped from the Missouri River to supply the areas of need. (This was cited as the most likely option by Mr. Charles Buescher of the St. Louis County Water Company which directly or indirectly supplies most of the area now.)

D. Employment. Growth in employment throughout much of the Pine Ford area will be dependent upon the demand for transportation, contract construction and mining activities. The location quotient (L.Q's) measure

the degree of specialization in employment categories. Assuming that regional demand for goods or services is the same as it is nationally, then the percent employed regionally would equal the percent employed nationally in an employed category. This would yield an L.Q. of 1 and would indicate that the area is self-sufficient for this category. If the L.Q is greater than 1, then the percentage employed locally is greater than that employed nation-wide. Such an industry is considered to be an export industry, but only the percent which is greater than the national percent is considered to produce for export outside the area because the remainder is needed for local demands. Conversely, if the L.Q. value is less than 1, it is assumed that the area must import goods and services from other regions to make up for local deficiencies.

L.Q.'s are valuable analytical tools because they point to strengths and weaknesses in local economies. For categories with values less than 1, the region must import good and services and income flows out of the area. Likewise, categories with values greater than 1 are exporting industries and generate income flows to the area.

On the surface, high L.Q. values would seem to be beneficial to the local economy, but this may not be the case. For example, if an area has high L.Q. for manufacturing, but the manufacturing is almost entirely in durable goods, the area's economy will follow the business cycle with booms and recessions being more pronounced. Also, if the area is largely dependent upon one type of manufacturing, e.g., textiles, an exogenous economic impact such as increased cheap imported textiles could have a great negative effect on the local economy. As the following tables indicate with the exception of St. Louis County, the remaining counties in the Big River and lower Meramec basins concentrate employment in mining and contract construction.

7 etc! So what would the Corps do to change that?

LOCATION QUOTIENT
FRANKLIN COUNTY FRACTION/TOTAL U.S. FRACTION EMPLOYMENT

INDUSTRY	1940	1950	1960	1970
Agricultural Service Forest and Fish	1.8693	1.8114	1.8109	1.7935
Mining	0.6049	0.5366	0.9802	2.8750
Contract Construction	1.1828	1.2692	1.3180	1.6626
Manufacturing	1.0972	1.2480	1.3544	1.3356
Transportation	0.6456	0.6441	0.6829	0.7710
Wholesale and Retail	0.6751	0.7640	0.8657	0.8720
Finance, Insurance	0.2622	0.3639	0.4167	0.4969
Services	0.6126	0.6143	0.5736	0.6237
Total Government	0.4408	0.3586	0.3497	0.3155
Not Reported (dist'd)	0.7434	1.1429	1.0254	

LOCATION QUOTIENT
WASHINGTON COUNTY FRACTION/TOTAL U.S. FRACTION EMPLOYMENT

INDUSTRY	1940	1950	1960	1970
Agricultural Service Forest and Fish	1.8207	2.4089	1.8021	0.9429
Mining	12.8439	6.6280	12.1980	24.8625
Contract Construction	0.4237	0.6917	1.0511	1.0035
Manufacturing	0.4600	0.8018	0.8629	0.8490
Transportation	0.5653	0.8087	1.1549	0.7435
Wholesale and Retail	0.4838	0.5998	0.7799	0.7231
Finance, Insurance	0.1341	0.2426	0.2690	0.1773
Services	0.5196	0.6177	0.6450	0.8347
Total Government	0.4584	0.3619	0.4079	0.3091
Not Reported (dist'd)	1.0263	1.6667	0.5369	0.9467

LOCATION QUOTIENT
JEFFERSON COUNTY FRACTION/TOTAL U.S. FRACTION EMPLOYMENT

INDUSTRY	1940	1950	1960	1970
Agricultural Service Forest and Fish	1.2849	1.0016	0.6496	0.3913
Mining	0.4829	0.3963	0.4950	1.7000
Contract Construction	1.2473	1.1533	1.3031	1.3512
Manufacturing	1.436	1.5488	1.3843	1.2555
Transportation	0.8981	1.2168	1.2066	1.2168
Wholesale and Retail	0.7336	0.7437	0.8382	0.9212
Finance, Insurance	0.3354	0.4734	0.6571	0.6598
Services	0.6193	0.5987	0.6936	0.6358
Total Government	0.3652	0.3425	0.3099	0.4317
Not Reported (dist'd)	0.5132	8.3810	1.3461	1.5483

LOCATION QUOTIENT
ST. FRANCOIS COUNTY FRACTION/TOTAL U.S. FRACTION EMPLOYMENT

INDUSTRY	1940	1950	1960	1970
Agricultural Service Forest and Fish	0.6806	0.7827	0.6848	0.5707
Mining	12.5415	15.5	18.6733	14.8250
Contract Construction	0.7355	0.7113	1.0165	1.1713
Manufacturing	0.4575	0.5830	0.5724	0.6620
Transportation	0.8465	0.9464	1.0172	1.0092
Wholesale and Retail	0.9734	0.8673	1.0636	0.9644
Finance, Insurance	0.4238	0.4142	0.6167	0.5711
Services	0.9452	0.8753	0.9935	1.0106
Total Government	0.6826	0.3570	0.2781	0.3052
Not Reported (dist'd)	1.4803	1.7143	0.4606	0.9900

LOCATION QUOTIENT
ST. LOUIS COUNTY FRACTION/TOTAL U.S. FRACTION EMPLOYMENT

INDUSTRY	1940	1950	1960	1970
Agricultural Service Forest and Fish	0.2734	0.1909	0.1378	0.1658
Mining	0.1366	0.0976	0.1485	0.1750
Contract Construction	1.4452	1.1794	0.9753	0.8322
Manufacturing	1.0748	1.5488	1.3843	1.2555
Transportation	1.1966	1.1582	1.1420	1.0198
Wholesale and Retail	1.2487	1.1653	1.0734	1.1601
Finance, Insurance	1.6768	1.5503	1.3905	1.1649
Services	1.2195	1.0011	0.8800	0.9183
Total Government	0.7481	0.7593	0.5616	0.6450
Not Reported (dist'd)	0.5132	1.0544	0.9415	0.7717

E. Business Activity. A discussion of business activity would follow the same line of analysis as found in employment. As long as the demand for mining and contract construction are strong, the study area counties should do well in terms of business activity. When the business cycle turns against these industries, unemployment can be severe. The business activity in these counties is dependent basically upon three industries; greater diversification in income producing industries is needed to stabilize the adverse impacts of recessions.

F. Displaced Farms. Larger farms will continue to dominate ownership due to rising costs and the economies of scale that benefit a larger scale enterprise. No dramatic change in agricultural land is is expected in the Big River area, but recreation and open space uses may dispace farm lands which lie in the lower Meramec River floodplain through the year 2000.

G. Population Growth and Density. Much of the exodus from rural to urban areas has either dwindled or has been reduced considerably. Unless some unforeseen change occurs, such as severe water shortages or energy shortages, population growth, distribution and density will not change much from existing patterns. The exception will be for small towns which may grow somewhat more rapidly than in the past. Again, water and energy may play an important role in population movements especially in the longer run.

The lower twenty five miles of the Meramec River basin bordering St. Louis and Jefferson county are expected to undergo substantial residential population growth. The following table indicates the trends in vital water supply areas.

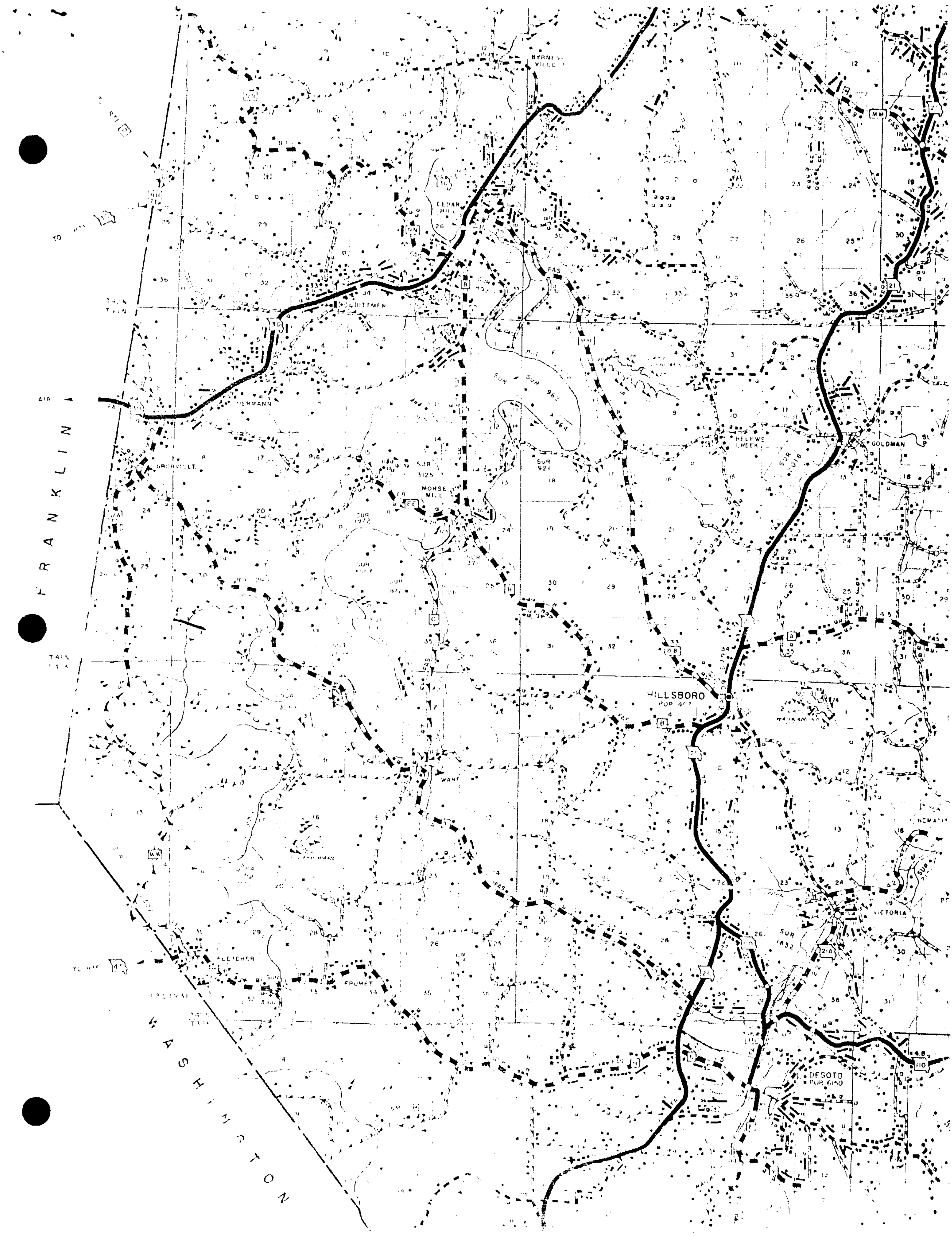
. . . . due to point sources or due to agricultural operations and individual home treatment systems. Furthermore any potential pollution from [redacted] ag operations ~~or home treatment systems~~ would probably occur at high flow situations ~~which [redacted] would not be [redacted] for regulated releases~~ in which case minimum flow releases would be of no benefit.

Projected Population For the St. Louis, Area
Jefferson County, Area, and
Flat River Area, 1980-2080

YEAR	ST. LOUIS AREA POPULATION	JEFFERSON COUNTY AREA POPULATION	FLAT RIVER AREA POPULATION
1980	209,713	18,111	24,103
1990	239,150	22,062	28,251
2000	287,974	26,012	32,399
2010	375,024	29,961	36,546
2020	420,962	33,911	40,701
2030	470,891	37,862	44,842
2040	519,057	41,811	48,988
2050	567,229	45,761	53,136
2060	615,395	49,711	57,303
2070	663,512	53,661	61,431
2080	711,727	57,611	66,452

H. Land Use. The predominant land use trend in St. Louis County along the lower twenty five miles of the Meramec River is expected to be residential with Lemay, Concord, Sappington, Fenton, Valley Park, Bonhomme, Times Beach and Eureka undergoing substantial residential land use growth through the year 2000. Most industrial land use growth will focus in Lemay (bordering the Mississippi and Meramec Rivers), Fenton and Eureka. There will also be additional commercial land use growth in Lemay (around I-55 and I-270), Concord (along Tesson Ferry), Sappington (near Hwy 141 and Hwy 30), Fenton (along I-44), and near Eureka-Time Beach along I-44. Another important trend is the use of the Meramec River floodplain for parks, recreation and open space. This development and growth is expected to displace agricultural lands throughout this period.

Data for the Jefferson County area bordering the Meramec River is sparce but general information from East-West Gateway's "The 1995 Regional Land Use Plan for Metropolitan St. Louis" would suggest continued development of "fringe" or light residential uses with the remainder in rural endeavors.


FRANKLIN
WASHINGTON
CEDAR HILL
DITTMER
GRUBVILLE
MORSE MILL
HILLSBORO
GOLDMAN
VICTORIA
DESOTO
POP. 6150
FLETCHER
FRUMET
WARE

RECORD OF COMMUNICATION

☐ PHONE CALL ☐ DISCUSSION ☐ FIELD TRIP ☐ CONFERENCE
☒ OTHER (SPECIFY)

(Record of item checked above)

TO: Fenemore, B.

FROM: KSR,

DATE: 2/19/82

TIME:

SUBJECT: Review of Pine Ford Future without a project

SUMMARY OF COMMUNICATION

o The document does not provide sufficient information on ~~volume~~ quantity, location etc of lead mine tailing to address the 5-6,000 from a RCRA view point or state solid waste views

o At present the Superfund Section is addressing a lead mine tailings pile near Desloge,

o Copies should be provided to Mr. Steinkuehler

o At present Congress has required EPA to study solid waste from the extraction, beneficiation, and processing of ores and minerals. As a result, mining tailings are ~~[illegible]~~ not currently regulated as a hazardous waste, EPA is in the process of studying this waste stream for two year study. In 1980,

CONCLUSIONS, ACTION TAKEN OR REQUIRED

o EPA contact is Doug Cohen 673-382-2207, I will contact him on Monday, 1

INFORMATION COPIES
TO:

EPA Form 1300-6 (7-72) REPLACES EPA HQ FORM 5300-3 WHICH MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE February 18, 1982

SUBJECT Review of the "Pine Ford Future Without a Project"

FROM Allan S. Abramson, Ph.D./AA
Director, Water Management Division

TO Thomas L. Budd
Acting Assistant Regional Administrator
Office of Policy and Management

ATTN: Robert Fenemore
Environmental Review Branch

Chuck / Bob what's this all about? TW 2/19

The Drinking Water Branch has reviewed the report entitled, "Pine Ford Future Without a Project", However, we feel we can not support nor critique the project without supplementary information.

We would be happy to do a complete review of the project if the "Feasibility and Surveillance Report" containing background information could be supplied to us.

AIR

State [illegible] [illegible] & STP

CAA up for [illegible] — [illegible]

EPA Form 1320-6 (Rev. 3-76)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

February 23, 1982

Mr. Jack R. Niemi, P.E.
Chief, Engineering Division
U.S. Army Engineer District, St. Louis
210 Tucker Boulevard, North
St. Louis, Missouri 63101

Attention: Mr. Dave Leake

Dear Mr. Niemi:

Several programs within our Regional Office have reviewed the draft of the section entitled, Pine Ford Future Without A Project. We assume this section is being developed as part of the environmental impact statement for the proposed Pine Ford Dam and Reservoir.

We are unable to provide specific comments on the report since we have not received any specific information on the project. Apparently our office was not included in the recent distribution of project plans. Mr. Leake is providing us the project-specific information. When we receive this material, we will be able to provide detailed comments.

Not receiving

A meeting has been tentatively scheduled for March 4 or 5, 1982, to discuss our comments and those of other agencies. By that time we hope to have received detailed project information and completed a more extensive review of the without-project condition.

Sincerely yours,

Charles H. Hajnian, Chief
Environmental Review Branch

cc: Dave Leake, COE

ENRV:Fenemore:ar:2/24/82 CONCURRENCES

SYMBOL	EIST	EIST RXXX	ENRV				
SURNAME	FENEMORE	FENEMORE	HAJNIAN				
DATE	2/24/2	FOR VEST 2/24/2	2/24/82				

EPA Form 1320-1 (12-70) OFFICIAL FILE COPY